



EGO-KIT. USER MANUAL.

1200 WATT ADD-ON ELECTRIC POWER KIT.





CONSUMER SAFETY

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Before using the EGO-Kit, please read the entire user manual as it contains important information for its proper usage and reduced user risk. Damages resulting from not adhering to this user manual will void the warranty/guarantee. Proper maintenance of the bicycle as well as the EGO-Kit is essential, as it reduces the risk of injury and/or accidents with possible lethal consequences for the bicyclist or others.

RIDING WITH THE EGO-KIT REQUIRES A HIGH LEVEL OF ATTENTION AND SPECIFIC ABILITIES. BEGIN SLOWLY ON EASY TERRAIN AND EXPAND YOUR ABILITIES STEADILY FROM THERE. HIGH SPEEDS INCREASE THE RISK OF FALLING AND THUS THE RISK TO SUSTAIN INJURIES. BECOME ACQUAINTED SLOWLY WITH YOUR ELECTRIFIED BICYCLE BEFORE ATTEMPTING HIGHER SPEEDS OR MORE DIFFICULT TERRAIN.

Before going for a ride, the EGO-Kit and bicycle to which the EGO-Kit has been mounted both must be checked for any damage and proper function. You must not put the bike and EGO-Kit into service if you notice bent, fractured, or cracked parts on the EGO-Kit or the bicycle, or if one or more of the initially delivered parts are missing.

Each and every crash with the bicycle can lead to serious or even fatal injuries! Depending on the intensity of use, the EGO-Kit and all of its parts should be thoroughly inspected and maintained regularly. Please contact your EGO-Kit dealer for service arrangements.

- Never ride alone in remote areas. Be sure to tell a friend or family member where you are planning on going.
- Ensure that the EGO-Kit is properly mounted and functional before going on your first ride.

After installing the EGO-Kit on your bike, go for a test ride to check the bike and EGO-Kit for proper function on a well known route without obstructions.

THE EGO KIT IS A RETROFIT PROPULSION DEVICE DESIGNED FOR WELL BUILT/NONCARBON FIBER MOUNTAIN BIKES.

TERMS AND CONDITIONS AND WARRANTY

please refer to:

<http://www.ego-kits.com/en/support/agb/>





CONSUMER SAFETY

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SHOW RESPECT WHEN USING THE EGO-KIT

Adhere to all local laws and regulations governing the use of (electrified) bicycles on and off road.

IT IS YOUR RESPONSIBILITY TO KNOW THE LOCAL LAWS GOVERNING ELECTRIFIED BICYCLES IN YOUR STATE, CITY, AND MUNICIPALITIES. EACH IS DIFFERENT WITH REGARDS TO ON- AND OFF-ROAD USE.

UNLESS SPECIFICALLY ALLOWED, USE OF THE EGO-KIT ON PUBLIC ROADS IS NOT PERMITTED. CHECK LOCALLY TO SEE WHAT IS PERMITTED IN YOUR COUNTRY.

SHOW RESPECT FOR NATURE

- If possible, use paved paths to avoid uphill erosion.
- Look out for pedestrians and other users.
- Respect the trails and “Tread Lightly”.

AGE APPROPRIATE OPERATION

Bicycles with powerful electric motors and/or batteries are not toys!

Please ensure age-appropriate operation. We recommend the EGO-Kit for adult use only.

Previous knowledge and experience with the operation of electrified motors and motorcycles is an advantage.



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GENERAL TIPS FOR USING THE EGO-KIT.

Nothing satisfies the EGO more than DIY work. Even so, for the most relaxed DIY atmosphere we recommend (aside from your favorite tunes) that you enlist the help of a buddy for mounting the EGO-Kit. The EGO-Kit is delivered pre-assembled, and with some experience can be mounted in about an hour. If you only have basic knowledge it might take two hours.

ORIENTATION

The bottom is not the top, but where is the right hand side? When in motion, the direction of travel is what counts. The same goes for when working on your bike, thus the front is the front, the back is the back, and right and left are always the same as if you were riding your bike.

AREAS OF OPERATION

- For Downhill and Freeride Terrain
- In enclosed and secured areas
- In off-road areas
- In approved areas (check with your local authorities)

MODES OF OPERATION

- Normal pedaling WITHOUT motor support
- Normal pedaling WITH motor support
- Motor support with individual control using the throttle

PROPER CLOTHING

Before you take off, there are a few essentials we wanted to mention:

- Do not wear shoes with loose or dangling laces. They should be properly secured.
- Do not wear loose fitting pants, only tight fitting bike shorts or pants, in order to avoid getting caught in the chain.
- Do wear fitting protective gear: helmet, protectors (such as a back protector), gloves, etc. are a prerequisite to minimize risk.

CLEANING

- Do not use pressure washers for cleaning
- Use a sponge and brush instead
- Use only commercially available soap and water
- Do not use chemical or corrosive solvents

REDUCED LIFE EXPECTANCY

The life expectancy of the EGO-Kit is reduced if:

- it is used more often than average.
- the terrain you ride in is less even than the average terrain.
- you carry heavy loads.
- you put more stress on its components than the average rider.
- you put too much strain on the electrical components.
- you ignore warnings or error codes of the EGO-Kit.
- the EGO-Kit is installed and/or maintained improperly.
- the EGO-Kit is subjected to harsher than average environments (corrosive mud, salty air, salted roadways, etc.)
- the EGO-Kit is damaged due to a crash, jump, or other abuse.

The more of these factors apply, the shorter the life span of the EGO-Kit. Due to the large number of factors we are unable to be more specific on the expected life expectancy.



GENERAL TIPS FOR USING THE EGO-KIT.

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OPERATING SAFETY

Before each ride :

- check that all bolts and screws are properly tightened.
- check that the motor chain has the proper tension. **(page 16)**
- get on the bike first, then connect the battery.
- before connecting the battery, ensure that the system is turned off (ON/OFF switch on the throttle).
- when connecting the battery plug to the saddle plug, ensure a complete connection.
- ensure that the battery wire is routed properly along the backpack and that unobstructed operation of the bike is ensured. Ideally, it is routed along the abdominal strap of the backpack, via the groin area to the saddle. **(page 19)**
- before turning on the system be sure that the throttle can be twisted freely without friction. The throttle is supposed to auto-reset into its original position. **(page 17)**
- select the proper gear for taking off from standstill, depending on the terrain (incline, terrain properties, etc.).
- ensure that the chains are properly lubricated.
- check the chains regularly for proper tension.
- check electrical wires and plugs for damage.

PROPER USE

- Select the appropriate gear for taking off. You should be able to power the bike yourself in the gear you select. Start with pedaling yourself, then twist the throttle SLOWLY for the appropriate dosage of power.
- Avoid gears where the chain would be running in an extremely offset position (e.g. large chain ring in both front and back).
- For going uphill, use the small chain ring in lower gears.
- Change gears without motor power, use only your own pedaling power. After gears have been changed, you may carefully resume acceleration with the throttle.
- Do not change gears while the motor is powering the bike! (This will lead to excessive wear on chain and chain rings, possibly even chain failure!)
- The largest power output and optimum efficiency is in the mid RPM range.
- As with any motorized vehicle, operating the bike at full throttle for extended periods of time will damage the materials used.
- The EGO-Kit is splash proof but not waterproof.
- Do not ride through puddles or streams (neither the motor nor the controller must be submerged.)

MAINTENANCE ADVICE

The EGO-Kit must be regularly maintained, cleaned, and inspected, as moisture and dirt may accumulate depending on the riding conditions. We recommend that the EGO-Kit is regularly cleaned, dried, and freshly lubricated in order to ascertain its proper function.

- Do not store the bike outside or in the rain.
- Have the chains checked regularly for elongation by a bicycle dealer of your choice.



SPECIFIC WARNINGS WHEN USING THE EGO-KIT.

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- Before beginning mounting or maintenance work on your EGO-Kit, ensure that the battery has been disconnected.
- Never reach between the chain, the chain ring, or any other moving part while the bike is in operational readiness mode, or in operation.
- Do not burn yourself! During and after use, certain parts of the EGO-Kit such as the motor heat up.
- Never open the motor. The motor may only be repaired and maintained by trained professionals. In case of any signs of abnormal function, stop using the kit immediately and contact EGO-Kits support.
- Never use batteries that were not supplied with the EGO-Kit. Using third party batteries can cause irrevocable damage to the system and may have life threatening results (explosion, fire.)
- The EGO-kit will put additional strain to your existing bicycle components/drivetrain and we recommend replacing your bike with a new chain and cassette prior to installing the EGO-Kit
- The crank system was specifically developed for use with the EGO-Kit and should not be used for other purposes.
- Vehicles retrofitted with the EGO-Kit are not street legal. (Abide by country-specific laws and regulations governing the use of e-bikes!)
- The EGO-Kit is not meant to be used in competitive events.
- For safety reasons, the motor is equipped with an overheating safety device. If this device should shut the system off, do not disconnect the battery, but wait until the system has reached normal temperatures again and the throttle can be operated again.
- The temperature of the battery increases when in use. After using the battery, it should be allowed to cool down before recharging.



IMPORTANT INFORMATION FOR USING THE EGO POWER BATTERY.

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GENERAL INFORMATION

In order to extend the life expectancy of the battery and avoid accidents, we ask for your own interest that you adhere to the following safety precautions. The main cause of battery related accidents is improper handling such as:

- incorrect charge setting.
- overheating or mechanical damage to the battery due to a crash.

No liability can be assumed for personal and/or property and/or consequential damages due to handling of the battery outside of its intended purpose or ignoring of the safety precautions.

CHARGING THE BATTERY

Before connecting your charging station to a power outlet, please ensure that the country you are in has the proper voltage for your charging station. If your charging station is not rated for the country you are in, please get in touch with us immediately.

CONNECTING THE BATTERY TO THE CHARGING STATION

- 1) Connect the battery to the charging station first,
- 2) then connect the charging station to a wall socket,
- 3) finally switch on the charger.

Only use an original EGO-Kit charging station for charging the battery.

Using a non EGO-Kit charging station may cause damage and will void the warranty.

CHARGING STATION LED DISPLAY

The charging station is equipped with two differently colored LED's to indicate the charging state.

LED 1: RED = POWER ON

LED 2: RED = battery being charged

LED 2: GREEN = charging cycle complete

CHARGING TIMES (for discharged battery)

2Ah charging station // 5h = 80% // 7h = 100%

10Ah charging station // 1h = 80% // 1,5h = 100% (optional equipment, available separately)





IMPORTANT INFORMATION FOR USING THE EGO POWER BATTERY.

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STORING THE BATTERY

- Store the battery halfway charged (3 illuminated LEDs on the battery display), in a dry place, at room temperature (never below 5°C/41°F), protected from direct sunlight.
- Check plugs regularly for moisture, corrosion or other damage.
- Store and transport the battery only in fireproof containers. Riding with the EGO-Kit is the only exception, and the battery should of course be placed in the backpack during this time.
- When not in use, the battery voltage must be checked every four weeks, and, if needed, be recharged.

In case the battery was not stored properly, or if a deep discharge has occurred, take the battery to your dealer immediately. The battery has been designed with a special function to save battery cells that have been severely drained.

NEVER OPEN THE BATTERY!

IN CASE OF FIRE

Using Lithium batteries/battery packs outside their intended purpose may result in the cells exploding and/or catching fire. If - for any reason - a charging station or battery fire occurs,

A LITHIUM BATTERY FIRE CAN BE EXTINGUISHED WITH SAND, SUFFICIENT WATER, AN EXTINGUISHING BLANKET OR A FOAM FIRE EXTINGUISHER.



IMPORTANT INFORMATION FOR USING THE EGO POWER BATTERY.

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BATTERY

- Batteries and charging devices are not toys and must be kept away from children!
- Batteries must never be shorted out, taken apart, or thrown into fire! This may result in fire or explosion!
- Before each charging cycle, inspect the battery pack for damage.
- A damaged battery must not be charged or put into operation.
- Never place the battery on a combustible surface (e.g. carpet) or near combustible materials.
- Ensure proper ventilation during the charging process.
- When attaching the battery to the charging station, ensure proper polarity and voltage. If the battery poles are crossed, both the battery and the charging station will be damaged.
- Do not overcharge the battery. This would increase the risk of a fire.
- The temperature of the battery must not exceed 60°C/140°F; ensure proper cooling and ventilation.
- The battery should not be subjected to strong vibrations or friction.
- The battery should not be subjected to excessive moisture.
- Use the battery only for and in conjunction with the EGO-Kit motor.
- Before connecting or disconnecting the battery to/from the EGO-Kit, the main switch on the throttle must be turned off.
- Check that all functions are working properly before taking off.
- Ensure that all plugs are connected properly. Loose plug connections may cause damage due to electric sparks.
- In case the battery housing, the wire connections, or the plugs are damaged, contact EGO-Kits Support immediately.
- Liquids may leak from the battery if handled inappropriately. Avoid eye and skin contact. However, if you do get in contact with the liquid, rinse the affected parts with plenty of water and consult a physician immediately.
- Charge the battery only with the EGO-Kits charging station.
- Do not connect discharged batteries to the motor.
- Recharge the battery immediately after use (after letting it cool down), or before putting it into storage! If the battery is not at least halfway charged before going into storage for longer periods of time, a deep discharge could damage the cells.
- Recharging the battery is not possible if the battery is excessively warm. A temperature safety device will prevent this.
- Let the battery cool down to room temperature after use. Do not charge while still warm.

CHARGING STATION

- Using your auditory, visual, and touch senses, ensure that the cooling fan of the charging station is working properly during operation.
- For safety and product registration reasons (CE), you must not tamper with the charging station. The charging stations are calibrated to work with your specific EGO-Kits battery.
- If you have questions or doubts about the function, safety, or how to connect the device, please contact a specialist, or return the charging station to us, after contacting us first.
- The charging station must not become wet or moist, thus it should only be used inside.
- Verify if the power outlet to which you wish to connect the charging station can handle the current the charging station will require. Also verify that the wall outlet is equipped with a failsafe device or properly fused (RCD/GFCI device.)
- Only charge one battery on any given circuit at a time.
- Keep the charging station away from high temperatures (>40°C/104°F), low temperatures (<0°C/32°F), direct sunlight, dust, and dirt.
- Always ensure that the plugs are properly connected. Loose connections may cause damage.
- Leave a minimum distance of 20 cm/8" between the charging station, the battery, and other objects.
- Never place the battery on a combustible surface (e.g. carpet) or near combustible materials, even when charging.
- Ensure that the charging station and battery are not covered up, as the charging process generates heat. (e.g. do not charge the battery in the backpack!)
- If the device has been moved from a cold to a warm room, do not immediately put it into operation. The resulting condensation may cause operational problems or damage.
- If at any point in time it is assumed that the device cannot be operated without danger, if the battery or charging station shows visible signs of damage, if the device is non-functional, it is to be taken out of service and must be secured in such a manner that it cannot be put into service again.
- Do not operate the charging station/battery unsupervised!
- Turn off the charging station before unplugging it from the wall outlet when ending the charging cycle, or if the battery is fully charged.



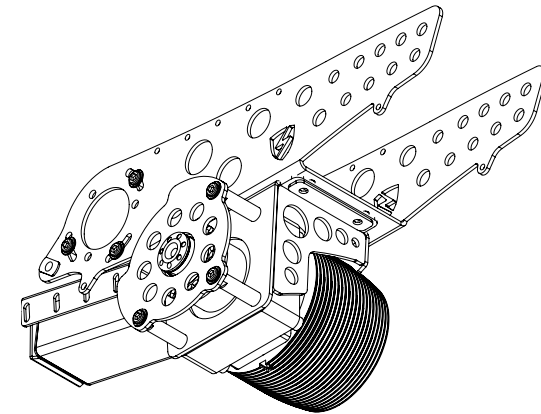
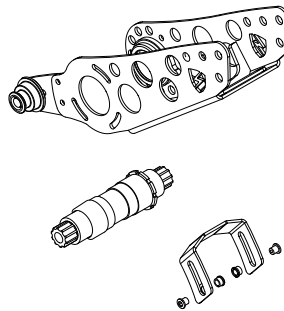


THE EGO KIT

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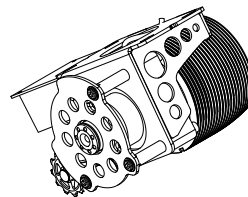
MAIN BRACKET

bracket 86 long + distance sleeve
bracket 86 short + distance sleeve
bracket 101 long + distance sleeve
bracket 101 short + distance sleeve
68/73 mm // bottom bracket with crank bearing sleeve
83 mm // bottom bracket with crank bearing sleeve
Upper and lower clamp // 2 x 10 mm chain ring sleeves
ISCG simulation ring (optional equipment)
DH chain guide (optional equipment)



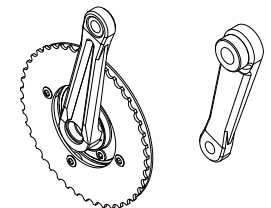
MOTOR

Motor with freewheel sprocket 13T
Motor mount // 2 x bolts + 4 x M6 nuts
Motor-chain tensioner
Motor chain
Motor-freewheel sprocket cover
// 3 x sleeves + 1 x M6 low profile nut + 4 x M6 bolts



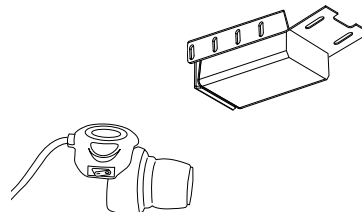
DRIVE SYSTEM

Right and left side crank
DH Set - chain ring 34T + 42T
FR Set - chain ring 22T + 36T + 42T
Freewheel assembly with "EGO-Adapter Plate"
4 x 10 mm short chain ring bolts silver
4 x 12 mm long chain ring bolts black
4 x spacers black



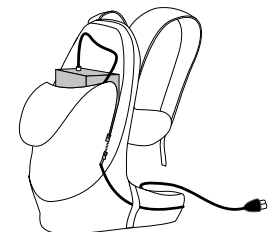
CONTROLLER

Controller unit
Mounting plate
Throttle



BATTERY PACK WITH BACKPACK AND CHARGING STATION

48 V // 12.5 Ah // Li-Mn Battery
Backpack Ergon BA1
2 Ah charging station
10 Ah charging station (optional equipment)





REQUIRED TOOLS

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In order to mount the EGO-Kit, keep the following tools handy.
(You can order the correct ISIS bottom bracket tool on our website.)

Allen wrenches _____
Torx driver _____



2,5mm // 3mm
4mm // 5mm
X20

Open-end wrenches _____



8mm // 10mm

Pliers/Wire cutters _____



Cable ties _____



approx. 5 pieces

Crank remover _____



Box cutter _____



Ratchet _____



ISIS bottom bracket tool _____



special accessory

MOUNTING THE EGO-KIT

ADJUSTING THE WIDTH OF THE BOTTOM BRACKET

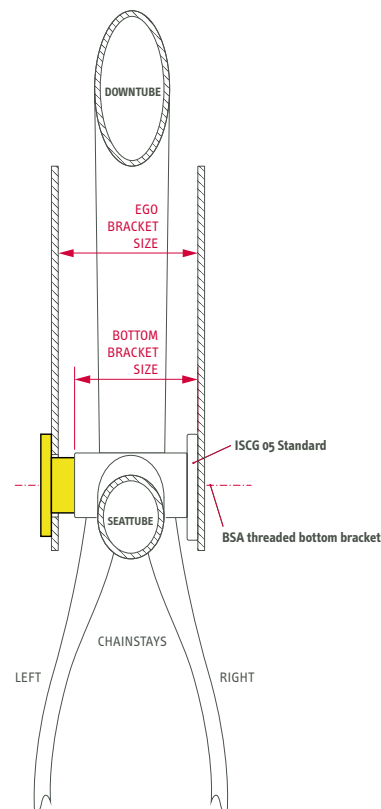
13

In order to mount the main carrier to the bottom bracket tube of the bicycle frame, two different types of adapters are designed to provide the necessary spacing (distance sleeve or spacer, yellow in the diagram) on the left side. Depending on the width of the bottom bracket tube, select the appropriate position.

ISCG

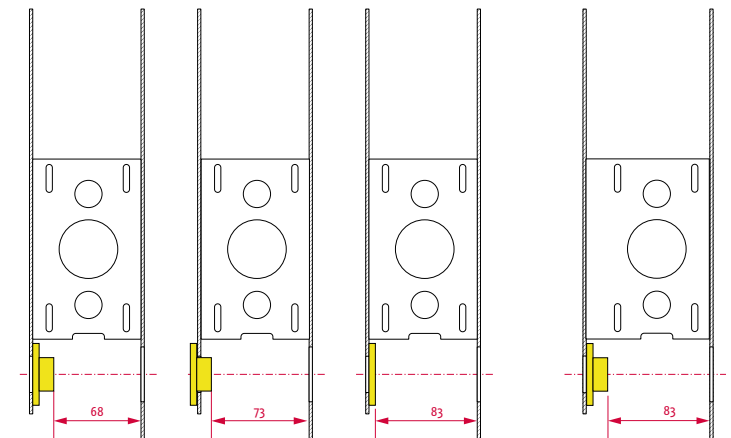
Bikes that do not feature ISCG attachment points can be retrofitted with an EGO ISCG Simulation Disk. Please contact EGO-Kits for further details.

TOP VIEW ON EGO-BRACKET



FR-BRACKET

(with different spacers/spacer positions)



PARTS CHECKLIST

Bottom bracket Distance Sleeve or Spacer
3 x M6 12 mm low profile bolts
ISCG Adapter (if needed)



MOUNTING THE EGO-KIT CONTROLLER POSITION

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2.1. Controller mounted below the bottom bracket

Delivered option bracket 86/101 short.

2.2. Controller mounted below the down tube, in front of the motor

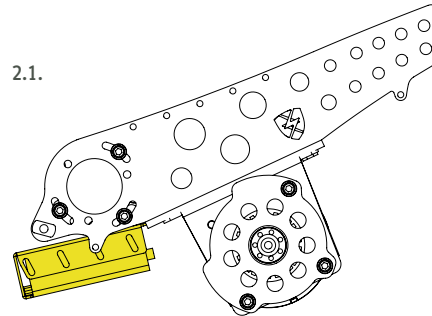
Delivered option bracket 86/101 long.

2.3. Controller inside the frame triangle.

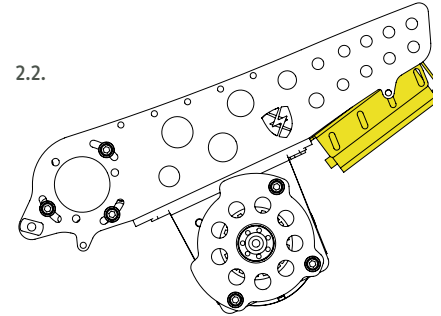
NOTE: if you want to mount the controller like on 2.3.

cut or break off the protruding piece of carrier sheet metal along the perforation and smooth out the resulting sharp edges with a file.

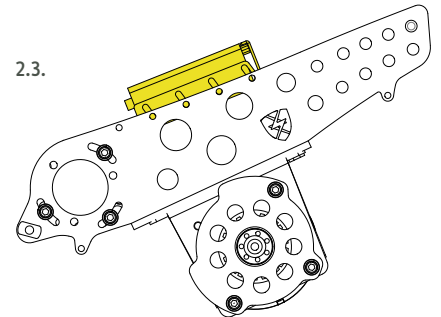
2.1.



2.2.



2.3.



PARTS CHECKLIST

Main carrier (pre-assembled)

Mounting plate incl. controller (pre-assembled)

2 x M4 x 6 mm bolts

2 x M4 nuts



PLEASE NOTE

Further information concerning the controller error codes can be found on **page 21**.



TOOL BOX

4 mm Allen wrench

8 mm // 10 mm open-end wrench



MOUNTING THE EGO-KIT

MOUNTING THE EGO-KIT TO THE FRAME

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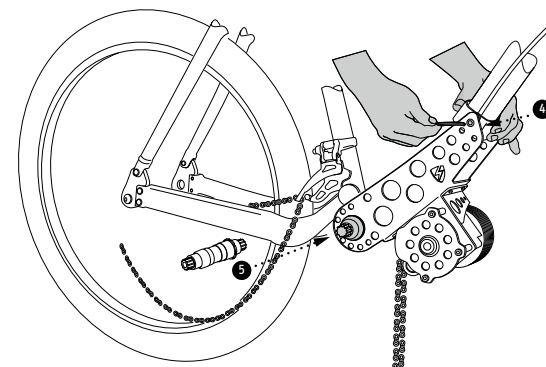
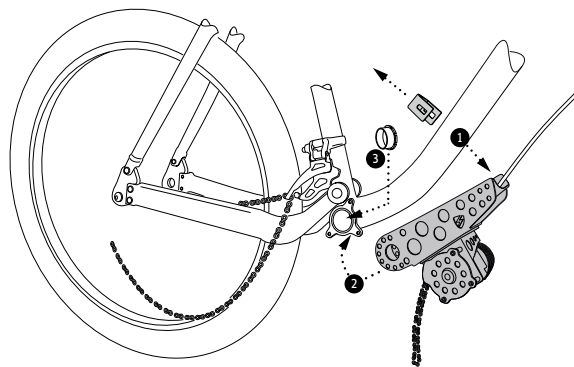
Before you can begin mounting your EGO-Kit, the existing crank system and bottom bracket must be removed.

- 3.1. Unbolt the clamps from the down tube.
- 3.2. Using three bolts, loosely attach the main carrier to the ISCG attachment points.
WITHOUT ISCG: Mount the ISCG adapter to the right hand side.
- 3.3. On the left side of the frame bolt a single bottom bracket jacket into the frame, thereby loosely fastening the distance sleeve to the frame.

CAUTION: the main carrier should butt up to the down tube (highest possible position for the motor.) Run the wire inside the main carrier, being careful not to pinch the wire.

- 3.4. Press the clamps together and attach to the appropriate holes.
- 3.5. Insert bottom bracket from the right hand side and bolt it in (left hand thread!)
- 3.6. Tighten the left side bottom bracket jacket and the ISCG.

CAUTION: route the throttle wire inside the clamps. Be careful not to pinch them.



PARTS CHECKLIST

EGO-Kit
+ down tube clamps + 2 x chain ring sleeves
Bottom bracket
ISCG-adapter (if needed)
Spacer / sleeve (if needed)



TOOL BOX

Two 5 mm Allen wrenches
X20 Torx driver



MOUNTING THE EGO-KIT

MOUNTING THE CHAIN AND ATTACHING THE CRANK

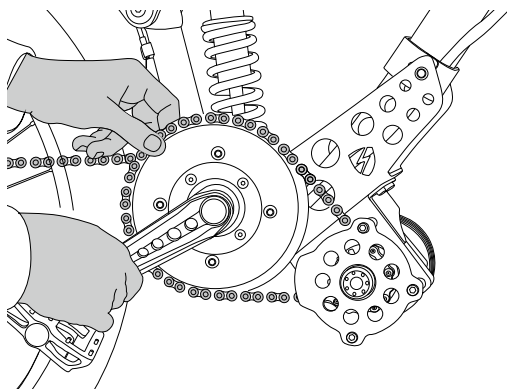
16

- 4.1.** Drape the motor chain over the outer chain ring. Drape the pedaling chain over the inner chain ring while pulling the rear gear change arm forward and securing it, or have a friend keep it in place. Slide the crank system onto the bottom bracket and render the bottom bracket bolts immovable.
- 4.2.** Check the chain run and adjust if needed. In order to set up the motor position properly and thus allowing for an ideal chain run and optimal tension, the four bolts that connect the motor mount to the main carrier (4xM6 screw bolts) need to be loosened. The motor can now be moved along the longitudinal axis to tension the chain and along the cross axis to align the chainrings. Avoid overdrawn chain tension or loose fitment.

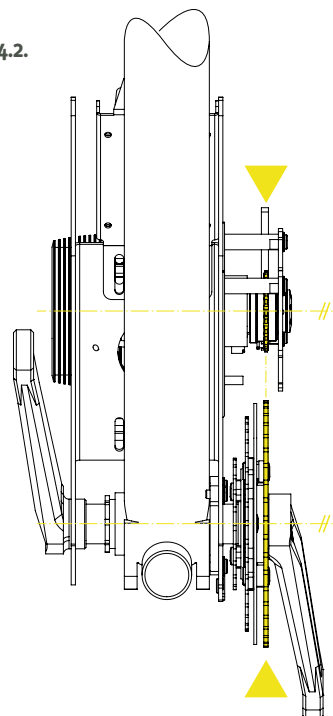
- 4.3.** The chain tension is set in a correct manner if you are able to move the chain for 1 cm between chainring and motor sprocket like shown in the illustration below.

When tightening the bolts again (approx. 10 Nm / 7,38 lb/ft), be sure that the chain is straight and parallel to the bike frame (do not mount the motor crookedly.)

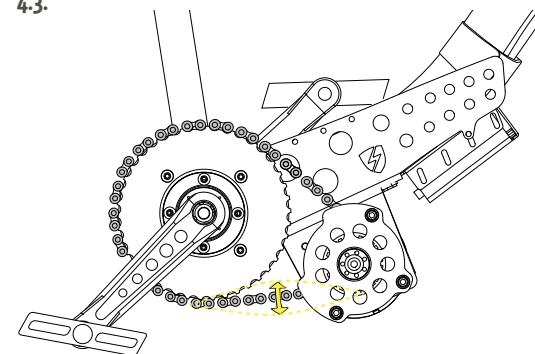
4.1.



4.2.



4.3.



PARTS CHECKLIST

Crank system (including crank arms)

TOOL BOX

5 mm // 2 mm Allen wrench

8 mm // 10 mm open-end wrenches



MOUNTING THE EGO-KIT

MOUNTING THE THROTTLE

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Before you begin mounting the throttle, the right hand handle bar grip needs to be removed.

- 5.1. Slide the throttle loosely over the handlebar, display facing upwards.
- 5.2. Ensure that the brake and gear shift levers are in such a position as to not cause any obstruction, nor cause them to be obstructed, in order to ensure their proper function. E.g. one arrangement would be (from the center to the outside) brake lever, gear shift lever, throttle. Brake lever and gear shift lever may have to switch positions.
- 5.3. Bolt the throttle to the handlebar. The wire must not interfere within the full range of motion of the handlebar.
- 5.4. Using a saw or box cutter, shorten the original grip by about 1/3 and reattach to the handlebar.

CAUTION: in order to avoid throttle movement being obstructed, it is extremely important that you keep a distance of 1 – 2 mm between the throttle and the handle bar grip.



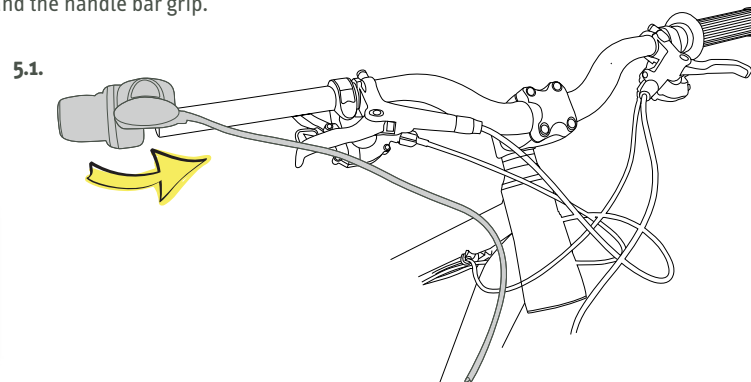
TOOL BOX

2.5 mm // 3 mm Allen wrenches

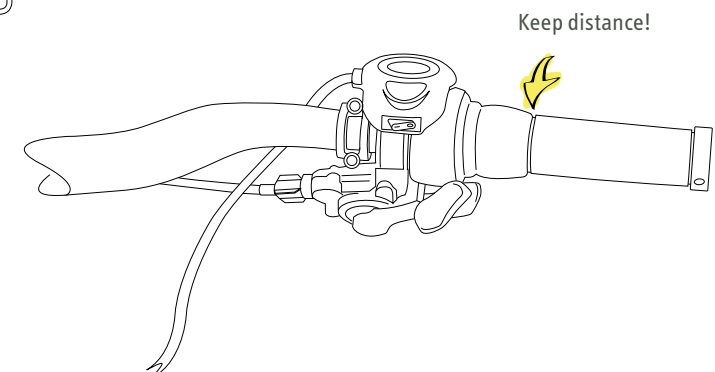
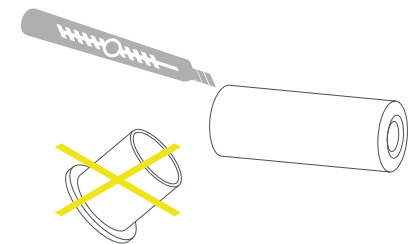


PLEASE NOTE

The throttle, when being let go, must automatically return to its original position!



5.4.



MOUNTING THE EGO-KIT

ROUTING THE WIRE AROUND THE SADDLE

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Before attaching the battery wire, remove the saddle.

- 6.1.** Route the battery wire along the saddle post.
Ensure that the wire is not exposed to friction or tension.
- 6.2.** Using cable ties, attach the wire to both saddle rails. After mounting, the wire must not slip, but the cable ties must not damage the wire insulation either! We recommend using two cable ties in the front of the saddle. One tie clamps the wire to the left rail, the other to the right rail. Use a third cable tie to attach the wire to either rail near the back of the saddle.
- 6.3.** Attach the wire to the saddle post in such a manner that the saddle can still be adjusted without obstruction or difficulty.

(The plug shown in the illustration on the right may have a different look)



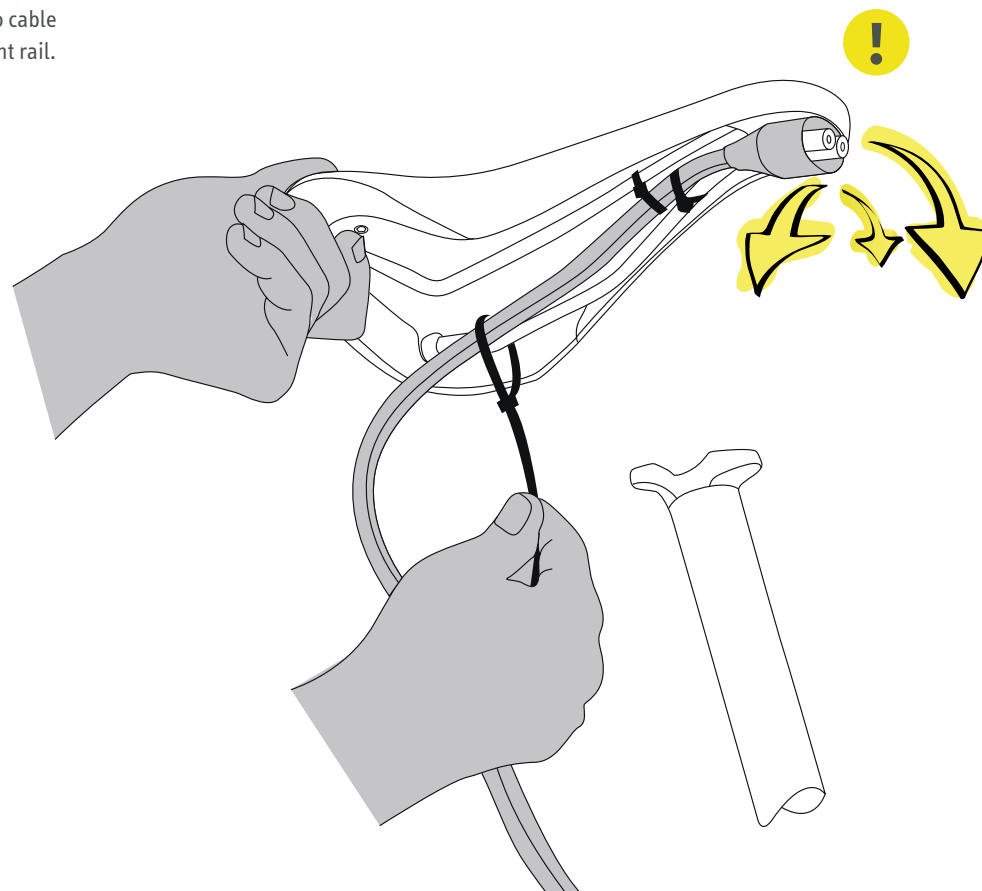
TOOL BOX

3 x cable ties
5 mm Allen wrench (to remove saddle)



NOTE

The plug at the front of the saddle must protrude beyond the rim of the saddle. It must be able to be twisted in all directions, in order to ensure an easy disconnect in case of a crash.



MOUNTING THE EGO-KIT

CONNECTING THE BATTERY

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Before putting on the backpack, ensure that the wire is properly routed.

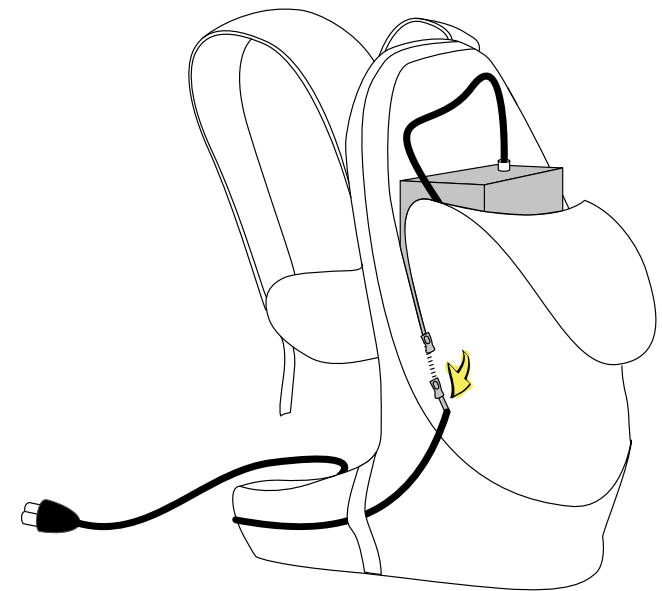
- 7.1. Decide if the wire should be routed along your left or right hip.
- 7.2. Have the wire come out of the backpack as close as possible to the bottom of the backpack, and, attached to the hip belt, to run it between your legs to the saddle plug. Adjust the length so that the bike can be ridden standing up.

CAUTION: when riding in the seated position, do **NOT** let the wire loop drape over your knee, which could cause interference when pedaling.

Before you take off:

1. Sit down on your bike.
2. Connect the battery wire to the saddle plug and check the wire length.
3. Only then turn on the main switch on the throttle.

You're ready to hit the trails!



PLEASE NOTE

Be sure to review the information regarding the battery and charging station on **pages 8 and 10**.
Please also review the notices on proper use on **page 6**.



THROTTLE LED-CODE

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LED-Code	Explanation
Blinking RED	System is on. Normal operation.



CONTROLLER LED-CODES

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The LED flashes once at power on, then keeps off for normal operation.
“1, 2” for instance means it flashes once, then flashes twice after 1 second. The time between two flashes is 0.5 second. The pause time between one error code and another error code is 2 seconds.

	LED-Code	Explanation	Solution
1,2	• •	Over voltage error	1. Battery voltage is higher than max. operating voltage of the controller. Please check the battery voltage and configuration. 2. Over voltage at regeneration. Controller will cut back or stop regeneration. 3. Please note there could be 2% error with Overvoltage setting.
1,3	• ••	Low voltage error	1. The controller will attempt to clear the fault code automatically after 5 seconds if battery voltage returns to normal. 2. Check the battery voltage. 3. Charge battery if necessary.
1,4	• •••	Over temperature warning	1. The controller temperature is over 90°. The controller will cut back current in the case. Stop or reduce output to ensure the temperature fall. 2. Improve heat sink or airflow.
2,1	• • •	Motor fails to start	Motor hasn't reached 25 electrical RPM after 2 seconds from starting. Most likely the hall or phase wiring problem.
2,2	• • •	Internal voltage fault	1. Check if the B+ and PWR voltage are correct, refer to B- or RTN. Could be PWR voltage low. 2. Please check load on 5V supply. Could be high load on 5V. Incorrect pot wiring can load it heavily. 3. The controller is damaged. Please contact EGO-Kits.
2,3	• • ••	Over temperature	1. The controller temperature is over 100°C. Controller stops driving in the case. 2. Stop driving and wait for temperature fall. The controller will restart if temperature drops below 80°C.

	LED-Code	Explanation	Solution
2,4	• • •••	Throttle error at power up	1. Throttle signal is higher than configured dead zone at power-on 2. The fault will disappear if restart or release throttle.
3,1	••• •	Frequent reset	It can be caused by over current, bad motor, bad ground wiring or so.
3,2	••• ••	Internal reset	Reset caused by over current, high battery voltage or low supply voltage. It is normal if occurs occasionally.
3,3	••• •••	Throttle short or open circuit when using 1-4v hall sensor throttle	1. Check whether the throttle is short or open up. 2. When the throttle is normal, restart will clear the error.
3,4	••• ••••	Throttle isn't zero when try to change direction	The controller won't change drive direction if throttle isn't zero. Also it won't change direction at high speed. The controller will wait throttle and speed close to zero before change direction.
4,1	•••• •	Over voltage at startup or regeneration	The controller won't drive motor if detect overvoltage at power up. It will cut back regen current or stop regen at overvoltage. You may set max voltage threshold with GUI.
4,2	•••• ••	Hall sensor signal error	1. Most likely caused by incorrect hall wiring, wrong pin or loose wire. 2. Intermittent or damaged hall sensor 3. Double check hall angle setting, 60 degree or 120 degree
4,3	•••• •••	Motor over-temperature	1. The motor temperature higher than configured max temperature. Controller will shutdown and wait for motor temperature drops. 2. Can change the temperature setting with configuration program.





FAQ

RECHARGEABLE BATTERY

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What is the best way to store my rechargeable batteries?

Rechargeable batteries should be stored at least halfway charged at room temperature and a relative humidity of 50%. EGO-Kit batteries should be recharged on a monthly basis, as every battery discharges itself if not used. This may cause permanent damage. The battery is not fully charged when delivered, thus it needs to be fully charged before its first use.

What is self-discharge?

Self-discharge occurs on its own and is dependent on ambient temperature. It is a chemical reaction process which takes place on the battery's electrodes when it is not connected to an electrical consumer. This means that all batteries and rechargeable batteries will eventually discharge, even when not in use. Self-discharge is dependent on the ambient temperature, and, the higher the temperature, the quicker the self-discharge. Ideal temperatures for storing your battery are between 10°C/50°F and 25°C/77°F.

What is a total discharge and is it dangerous for the battery?

When a total discharge occurs, the polarities of the cells of the battery with the lowest capacities get reversed. Just a single total discharge may destroy a battery. Furthermore, a total discharge will diminish the capacity of the battery.

What happens if I overcharge the battery?

Overcharging the battery will result in diminished capacity and damage to the battery. After fully charging your battery, the EGO-Kit charging station will automatically switch to maintenance charging, avoiding an overcharged battery. The fan will also switch off at this time. However, the battery should be disconnected from the charging station as soon as feasibly possible after the battery has been fully charged.

What is the memory effect, and how can I avoid it?

The memory effect is mostly observed among Nickel-Cadmium batteries and may diminish the capacity of the battery. This happens most frequently when recharging a battery that was not completely discharged before. The memory effect does not affect Lithium-Manganese batteries, such as supplied with your EGO-Kit.

How do I dispose of my EGO-Kit battery?

Please check your local battery recycling laws, Do not throw batteries away with your household trash!

Does the battery have a fuse?

Yes, the battery is equipped with a built-in fuse which only EGO-Kits can replace. Please contact EGO-Kits support for assistance.



FAQ OPERATION

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Is it ok to mount a chain guide?

Yes! The EGO-Kit adapter is equipped with a support for an optional EGO compatible chain guide.

Chain guide for dual chain ring (bottom)

Chain guide for single chain ring (top and bottom)

Is the electric motor difficult to maintain?

No. A brushless motor is virtually maintenance-free. As usual, keeping the chain and sprocket properly lubricated has its advantages. The transmission lubricant in the planetary gearbox should be checked regularly by a service professional.

What's the point of putting the battery in the backpack?

This solution keeps the weight of the bike low, thus leaving the handling of the bike as it should be for downhill and freeride rides; nimble and active.

How is the level of power controlled?

By using the throttle. It's mounted on the right arm of the handlebar and is approx. 3 cm / 1¼" wide, and looks similar to a grip shift gear changer.

Is the battery recharged while braking?

Cool idea, but no. Unfortunately, in reality such a system would be too heavy and thus compromise the ride characteristics of your bike. The resulting recuperation of energy would be way too little to warrant the device.

How many chain rings can I mount?

Three chain rings have been mounted to the crank. One motor chain ring and two drive chain rings to transfer power to the rear wheel. A separating disc is located between the motor chain ring and drive chain rings to ensure proper propulsion. We discourage installing a third drive chain ring, as there is not enough space to safely utilize that many chain rings. Generally, freeride bikes are not equipped with more than two drive chain rings.

Downhill use with a chain guard calls for the use of only a single drive chain gear.





FAQ OPERATION

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How does the motor weight affect the handling of the bike?

It's neutral. Because we put it near the center of gravity of the bike, the handling remains as agile and nimble as possible. This was the main goal behind the development of the EGO-Kit.

Does mounting the EGO-Kit reduce ground clearance?

No. At least not for most bikes. The lowest point on any bike is the chain ring. Unusual down tube designs may influence the position of the motor, though.

Can I ride in the rain with an electric motor?

Sunshine is way better than rain, however, you don't want to skip on fun just because it's raining. Splash water is not a problem. Do not use pressure washers for cleaning, as this will void the warranty! Avoid riding through creeks or rivers. If riding in the rain, make sure to cover the throttle. A plastic bag works well. In addition, travelling with the EGO-Kit on the roof of a car or behind the car in the rain simulates a pressure washer. Please make sure that if you must transport your bike in this fashion that the controller, motor and throttle and covered with some protection such as a plastic bag.

Can I keep pedaling after the battery has been drained?

Yes! Because of the motor freewheel device; there is no resistance when using the bike without motor support. Your bike stays a bike!

Can I keep the pedals stationary while under full throttle power?

Yes! There is no crank sensor governing the amount of motor power to the rear wheel. Acceleration comes only from twisting the throttle and of course your own physical power. Furthermore, due to the crank freewheel device, the pedals do not move when the motor is used, allowing you to fully concentrate on your uphill ride.

Can I ride using any gear ratio selection of my choice?

In general, yes. However, the EGO-Kit is delivered with what we believe to be optimum gear ratio already mounted. A tested and true combination of the motor sprocket, motor chain ring, and drive chain ring, which delivers equally great results between power and top speed. This is supplied with your EGO-Kit.

ANY MORE QUESTIONS?

Just get in touch! Easy going!

support@ego-kits.com





TROUBLESHOOTING

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Motor is not turning?

- Check the on/off switch on the throttle to make sure it's in the "ON" position.
- Check the saddle plug to the battery for a snug connection.
- Charge the battery – never store the battery in a discharged state.
- Check wires including insulation for damage. Contact EGO-Kits if needed.
- Check for LED error codes on the controller.

Battery is not charging?

- Check the connections. Redo the connections in the proper order.
Battery – Charging Station – wall outlet – on switch.
- Battery temperature too high – let the battery cool down and try again.

Charging station getting hot?

- Some elevated temperature is normal.
- Check the fan to make sure it can move freely (without dis-assembly).

Battery getting warm?

- This is normal.
- Depending on the current being drawn, the battery will generate heat. The battery management system inside the battery will ensure that the temperature generation remains within safe levels.
CAUTION! A warm battery should be allowed to cool down before attempting to recharge it.

Throttle sticking?

- Check to see if it can move freely.
- If needed, move the handlebar grip a little away from the throttle.
- Ensure that the throttle display is not pushed up by the brake lever clamp.

Chain derailing?

- Check chain tension and chain run.
- Motor sprocket and motor chain ring must be properly aligned.
- Chain must not hang loosely.





EXPLANATION OF IMPORTANT GRAPHIC SYMBOLS

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The CE symbol signifies freely marketable industrial products in the European Economic Area (EEA.) The device conforms to CE and fulfills the required European guidelines.



The symbol showing an arrow pointing inside a house stands for utilization within an enclosed space. Using the device outside could cause damage to the device.



The crossed-out garbage can symbol signifies a selective waste disposal process for electric and electronic waste. This means that this product has to be handled in a specific way when being recycled or taken apart in order to keep the environmental impact at a minimum. Improper disposal may result in environmental or health-related risks.



The symbol depicting an exclamation mark inside a triangle cautions to use special care in handling, use, or operation. Please read the user manual carefully. This symbol warns of misuse which could result in damage to persons, property, or the environment.



The symbol showing a lightning bolt inside a triangle is used if your health could be jeopardized, such as by electric shock. Do not open the device!



The symbol depicting the letter “i” inside a book located inside a circle advises to read the user manual carefully and to understand it.



The symbol “ATE/OK” on the charging unit means that this device has passed automated tests.



The symbol “HI-POT OK” on the charging unit means that this device has undergone a high voltage serial test, ensuring that no high voltage can jump from the primary to the secondary circuit.



This symbol shows the maximum ambient temperature safe for the use of the device marked.



A device marked with the symbol showing a crossed-out lit match should be kept away from open flames or sources of ignition.



The RoHS (2002/95/EC) Compliant Symbol indicates that the labeled devices adheres to the minimum levels for toxic components as required by EU-Guideline 2002/95/EC.



We are continuously and diligently working on ensuring the quality and accuracy of all of the information provided in this booklet. All work you perform on your bike is at your own risk. When in doubt, please contact us or take your bike to a specialist.

We do not warrant and cannot be held liable for the contents of this manual. If you have questions, doubts, or suggestions, please contact us immediately.



ANY MORE QUESTIONS?

Just get in touch! Easy going!

support@ego-kits.com

With the exception of the express written duties in accordance with our warranty declaration, EGO-Kits and eRide and their suppliers and distributors are not liable for any direct, indirect, special, accidental or subsequent damages, unless otherwise demanded by local laws and regulations.

eRide Industries GmbH, Munich, Germany, 11 Nov. 2011



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